

What is claimed is:

- 1 1. A hot-swap device applicable to the ATA (AT Attachment) interface,  
2 comprising at least an IDE hard disk drive (HDD) controller for processing  
3 IDE instructions transferred from the ATA interface, wherein at least a  
4 program code is provided to the IDE hard disk drive controller to respond to  
5 the ATA interface "a virtual storage device" in the case of lacking a real  
6 storage device connected to the IDE HDD controller via the ATA interface, or  
7 if the program code is executed to connect "a real storage device" to the IDE  
8 HDD controller via the ATA interface, connection of the IDE HDD controller  
9 with the ATA interface is disabled so that the real storage device will respond  
10 to the ATA interface directly.
- 1 2. The hot-swap device according to claim 1, wherein the program code for output  
2 of "a virtual storage device" to the ATA interface is run by the IDE hard disk  
3 drive controller to effect output of a virtual identifier (ID) table and a virtual  
4 partition table to the ATA interface.
- 1 3. A hot-swap device applicable to the ATA (AT Attachment) interface,  
2 comprising an integrated drive electronics (IDE) hard disk device controller for  
3 processing IDE instructions transferred from the ATA interface, wherein at least  
4 a program code is provided to the IDE hard disk drive controller for the same to  
5 execute and respond to the ATA interface "a virtual storage device" in the case  
6 of lacking a real storage device connected to the IDE hard disk drive controller,  
7 or respond to the ATA interface "a real storage device" if the program code is  
8 executed to connect a "real storage device" with the IDE hard disk drive.

- 1 4. The hot-swap device according to claim 3, wherein the real storage device is a  
2 compact-flash memory storage device.
- 1 5. The hot-swap device according to claim 3, wherein the program code for output  
2 of "a virtual storage device" to the ATA interface is run by the IDE hard disk  
3 drive controller to effect output of a virtual identifier (ID) table and a virtual  
4 partition table to the ATA interface.